

2011 R & D 100 Award Winners

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The 2011 R&D 100 Award Winners are listed below in alphabetical order by the name of the primary developer company.

Primary Developer	2011 R&D 100 Winning Technology (Category)	Co-developers/Contributors
A123 Systems Inc., USA	A123 Systems Nanophosphate Engine Start Battery (Energy Devices)	
Agilent Technologies, USA	Infiniium 90000 X-Series Oscilloscope (Electronic Instrumentation)	
Argonne National Laboratory, USA	Advanced Ceramic Film Capacitors for Power Electronics in Electric Drive Vehicles (Electrical Devices)	
Argonne National	Enhanced Renewable Methane	Eurisko Scientific LLC

Laboratory, USA	Production System (Energy Devices)	
Argonne National Laboratory, USA	Integrated RF MEMS Switch/CMOS Device (Communication Technologies)	MEMtronics Corporation Innovative Micro Technologies Peregrine Semiconductor Advanced Diamond Technologies
Argonne National Laboratory, USA	Photoacoustic Spectroscopy (PAS) System for Remote Detection of Explosives and Chemicals (Safety and Security)	
Battelle Memorial Institute, USA	Resource Effective Bioidentification System (REBS) (Environmental Technologies)	
Black Box Network Services, USA	VirtuaCore Desktop Virtualization Computer Sharing (Information Technologies)	Fiddlehead Inc.
Brookfield Engineering Labs Inc., USA	Powder Flow Tester (Laboratory Equipment)	The Wolfson Centre for Bulk Solids Handling Technology, University of Greenwich
Brookhaven National Laboratory, USA	Maia X-ray Microprobe Detector System (Analytical Instruments)	Commonwealth Scientific and Industrial Research Organisation (CSIRO)
Brookhaven National Laboratory, USA	Multimodal Optical Nanoprobe for Advanced Electron Microscopy (Imaging Technologies)	Nanofactory Instruments AB
Brooks Automation Inc. USA	830 Vacuum Quality Monitor (VQM)	Rutgers University

	(Analytical Instruments)	
Bruker Nano Surfaces Division, USA	Acuity XR: Enhanced-Resolution Microscopy (Imaging Technologies)	
Calabazas Creek Research Inc., USA	Controlled Porosity Reservoir Cathodes (Beam Instruments)	Ron Witherspoon Inc.
Carl Zeiss MicroImaging LLC, USA	LSM 780 (Imaging Technologies)	
Dell Inc., USA	Dell PowerEdge R810 (Information Technologies)	
Duraloy Technologies Inc., USA	New Stainless Steel Alloy Tooling For High Temperature Presses that Form Aircraft Components (Process Technologies)	Oak Ridge National Laboratory
Energetiq Technology Inc., USA	EQ-99 LDLS Laser-Driven Light Source (Lasers and Photonics)	
Excillum AB, Sweden	JXS-D1 Metal Jet X-Ray Source (Beam Instruments)	
FibeRio Technology Corp.	Cyclone L-1000S and the Cyclone L-1000M Forcespinning Systems (Process Technologies)	University of Texas-Pan American
GeneSiC Semiconductor Inc., USA	Ultra High Voltage Silicon Carbide (SiC) Thyristor (Electrical Devices)	Sandia National Laboratories U.S. Department of Energy Energy Storage Program U.S. Army/ARDEC
GrafTech International Ltd., USA	eGRAF SS1500 (Electronic Instrumentation)	
Hecus X-Ray Systems,	S3-MICROcaliX (Analytical	Laboratory Physico-Chimie

Austria	Instruments)	des Systemes Polyphases, University of Paris Institute of Biophysics and Nanosystems Research, Austrian Academy of Sciences
Hitachi, Yokohama Research Laboratory, Japan	Picometer-Resolution Quantitative Metrology Atomic Force Microscope (QM-AFM) (Imaging Technologies)	
Idaho National Laboratory, USA	Impedance Measurement Box (Energy Devices)	Montana Tech of the University of Montana Qualtech Systems Inc. Motloch Consulting Inc.
Idaho National Laboratory, USA	Rad-Release Chemical Decontamination Technology (Rad-Release) (Chemicals)	Environmental Alternatives Inc.
Industrial Technology Research Institute, Taiwan	HyTAC (Thin-Film and Vacuum Technologies)	
Industrial Technology Research Institute, Taiwan	i2R e-Paper, ITRI re-writable and re- usable electronic paper technology (Materials Sciences)	
Institute for Information Industry (III), Taiwan	In-Snergy: Cloud-based Intelligent Energy Management Technology (Energy Devices)	
Intel, USA	2010 Intel Core Processor Family (Information Technologies)	
JEOL USA Inc., USA	JEOL InTouchScope (Imaging Technologies)	JEOL Technics Ltd. JEOL Ltd.

Keithley Instruments Inc., USA	Model 4225 PMU Ultra Fast IV Module (Electronic Instrumentation)	
Lawrence Berkeley National Laboratory, USA	Magnetic Resonance Microarray Imaging (MRMI) (Imaging Technologies)	
Lawrence Berkeley National Laboratory, USA	Nanostructured Antifogging Coatings (Materials Sciences)	
Lawrence Livermore National Laboratory, USA	Serrated Light Illumination for Deflection-Encoded Recording (SLIDER) (Imaging Technologies)	
Lawrence Livermore National Laboratory, USA	Stack Trace Analysis Tool (STAT) (Software)	University of Wisconsin University of New Mexico
Los Alamos National Laboratory, USA	NanoCluster Beacons: Shedding light on specific nucleic-acid targets (Life Sciences)	
Los Alamos National Laboratory, USA	TAPSS: Trapped Annular Pressure Shrinking Spacer (Energy Devices)	Chevron Energy Technology Company Baker Hughes Incorporated (Drilling Fluids Unit) Lucite International Ltd.
Los Alamos National Laboratory, USA	Th-ING: Thorium Is Now Green (Energy Devices)	
Materials & Electrochemical Research Corp., USA	Rare Earths Supermagnets (Process Technologies)	
Medtronic, USA	Arctic Front Cardiac CryoAblation Catheter System (Life Sciences)	
MesoCoat Inc., USA	CermaClad (Process Technologies)	EMTEC

		Oak Ridge National Laboratory
Mettler-Toledo Inc., USA	Flash DSC1 (Analytical Instruments)	Anatech BV Xensor Integration BV SciTe BV
MIT Lincoln Laboratory, USA	Airborne Ladar Imaging Research Testbed (ALIRT) (Imaging Technologies)	
MIT Lincoln Laboratory, USA	Multifunction Phased Array Radar Panel (Imaging Technologies)	M/A-COM Technology Solutions
MIT Lincoln Laboratory, USA	Parallel Vector Tile Optimizing Library (Software)	
MIT Lincoln Laboratory, USA	PANTHER Bioaerosol Identification System (Environmental Technologies)	
Mitsubishi Electric Corp., Japan	Compact Injection Accelerator for Proton Therapy System (Beam Instruments)	
Mitsubishi Electric Corp., Japan	Diamond Vision OLED (Electrical Devices)	Tohoku Pioneer Corporation
NanoSonic Inc, USA	HybridSil Fire/Blast (Materials Sciences)	U.S. Navy
NASA Glenn Research Center, USA	Laser Pulse Stretcher (Lasers and Photonics)	Ohio Aerospace Institute
NASA Glenn Research Center, USA	Multi-Parameter Aerosol Scattering Sensor (MPASS) (Safety and Security)	National Center for Space Exploration Research Cleveland State University
NASA Glenn Research	Non-Flow-Through Fuel Cell Power	Infinity Fuel Cell and

Center, USA	System (Energy Devices)	Hydrogen Inc. Qinetiq North America McElroy PEM Technologies LLC Callahan Engineering PLLC
NASA Goddard Space, USA	MED-SEG (Imaging Technologies)	Bartron Medical Imaging Inc.
NASA Langley Research Center, USA	SansEC Temperature Sensor (Electrical Devices)	National Institute of Aerospace ATK Spacecraft Systems & Services
National Energy Technology Laboratory, USA	APECS v2.0 with ANSYS DesignXplorer and ROM Builder (Software)	ANSYS Inc.
National Energy Technology Laboratory, USA	Electroplated Mn-Co Coating for Solid Oxide Fuel Cell Interconnects (Energy Devices)	West Virginia University Faraday Technology Inc.
National Energy Technology Laboratory, USA	Novel platinum/chromium alloy for the manufacture of improved coronary stents (Life Sciences)	Boston Scientific Corporation Inc. Carpenter Specialty Alloys Minitubes ZAC TechnisudAccellent Inc.
National Renewable Energy Laboratory, USA	Flash Quantum Efficiency System for Solar Cells (Energy Devices)	Tau Science Corporation
National Renewable Energy Laboratory, USA	Innovalight Silicon Ink for High- Efficiency Solar Cells (Energy Devices)	Innovalight Inc.
National Renewable Energy Laboratory, USA	Optical Cavity Furnace (Energy Devices)	AOS Solar Inc.

NT-MDT, Russia	NanoEducator II (Imaging Technologies)	
Oak Ridge National Laboratory, USA	Hydrogen safety sensor based on nanostructured palladium cantilevers (Safety and Security)	University of Tennessee, Knoxville
Oak Ridge National Laboratory, USA	MADNESS software tool (Software)	
Oak Ridge National Laboratory, USA	Mesoporous Carbon Electrode for Desalination (Materials Sciences)	Campbell Applied Physics
Oak Ridge National Laboratory, USA	NextAire Packaged Gas Heat Pump (Energy Devices)	Southwest Gas Corporation IntelliChoice Energy
Oak Ridge National Laboratory, USA	Ultra-high Storage Density, Self-assembled, Magnetic Media (Materials Sciences)	
Pacific Northwest National Laboratory, USA	Array Detection Technology for Mass Spectrometry (ADT-MS) (Analytical Instruments)	University of Arizona Indiana University iMAGERLABS SPECTRO Analytical Instruments/Ametek
Pacific Northwest National Laboratory, USA	Dynaforge – A Solid-State Dynamic Powder Compaction Process for Production of High-Performance Tools and Dies (Process Technologies)	Carpenter Powder Products
PANalytical BV, The Netherlands	Empyrean X-ray diffractometer (Analytical Instruments)	Medipix2 Collaboration (CERN-based)
Panasonic Corp., USA	Integrated Twin-Lens 3D Camera-	

	Recorder - AG-3DA1 (Consumer Products)	
Perfinity Biosciences Inc., USA	Perfinity Workstation (Analytical Instruments)	
Pivotal Systems, USA	Gas Flow Monitor (GFM) (Mechanical Systems)	
Plasticell Limited, UK	CombiCult 2.0 (Life Sciences)	
Princeton Power Systems Inc., USA	Demand Response Inverter (DRI) (Energy Devices)	Sandia National Laboratories
Reinnervate Ltd., UK	alvetex (Life Sciences)	
Rigol Technologies Inc., USA	Rigol DS6104 Digital Oscilloscope (Electronic Instrumentation)	
RTI International, USA	NLITe – Nanofiber Lighting Improvement Technology (Materials Sciences)	
RTI International Metals Inc., USA	Continuously Cast Titanium Near Net Ingots (Process Technologies)	U.S. Army ARDEC RDAR-MEE American Engineering & Manufacturing Advanced Design Industries Inc.
SAES Getters SpA, Italy	NEXTorr D 100-5 Pump (Thin-Film and Vacuum Technologies)	SAES Advanced Technologies SpA
Sandia National Laboratories, USA	Biomimetic Membranes for Water Purification (Environmental Technologies)	University of New Mexico
Sandia National	Microresonator Filters and Frequency	

Laboratories, USA	References (Electrical Devices)	
Savannah River Nuclear Solutions, USA	Porous Walled, Hollow Glass Microspheres (Materials Sciences)	Toyota Motor Engineering & Manufacturing NA Inc. Georgia Health Sciences University Mo-Sci Corporation
Sierra Lobo Inc., USA	Cryo-Force Power-Cell (Energy Devices)	Department of the Navy, Office of Naval Research (ONR) Naval Undersea Warfare Center (NUWC)
Southwest Research Institute, USA	Dual Coil Offset (DCO) Ignition System (Mechanical Systems)	
State University of New York at Stony Brook, USA	Electricity-generating shock absorbers (Mechanical Systems)	
Stryker, USA	ADM X3 Mobile Bearing Hip Acetabular System (Life Sciences)	
Sun Innovations Inc., USA	Media Glass Superimaging (Imaging Technologies)	
Taiwan Textile Research Institute, Taiwan	All-Foldable Fabric Ultra-Capacitor (Electrical Devices)	Litnertex Co. Ltd.
Tennant Company, UK	500ZE Electric Suction Sweeper (Mechanical Systems)	
Tesla NanoCoatings Ltd., USA	Teslan Carbon Nanocoating (Materials Sciences)	U.S. Army Engineer Research & Development Center, Construction Engineering Research

Laboratory

Thermo Fisher Scientific, USA	Thermo Scientific Evolution 201/220/260 UV-Visible Spectrophotometers Featuring INSIGHT and CUE Software (Analytical Instruments)	
Thermo Fisher Scientific, USA	ICS-5000 Capillary Reagent-Free Ion Chromatography System (Analytical Instruments)	
3M Company, USA	3M Twin Axial Cable (Electrical Devices)	
U.S. Army Engineer Research & Development Center, USA	All Thermoplastic Composite, I-Beam Design, High-Capacity Bridge System (Mechanical Systems)	Rutgers University, Department of Materials Science and Engineering Axion International McLaren Engineering Group Department of Defense Corrosion Prevention and Control Program Army Facilities Installation Technology Transition Program
University of Colorado, USA	Compact, high-energy density, high-temperature superconducting cable (Electrical Devices)	National Institute of Standards and Technology
Varian Medical Systems, USA	TrueBeam and TrueBeam STx (Life Sciences)	
WITec GmbH, Germany	True Surface Microscopy (Imaging)	

	Technologies)	
Xeridiam Medical Devices, USA	PleuraFlow Active Tube Clearance System (Life Sciences)	Carbon Design Group Clear Catheter Systems
Y-12 National Security Complex, USA	RonJohn Blend (Chemicals)	RockinBoat LLC